All-Weather Road Servicing Options for York Landing - Public Consultation

Report

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All-Weather Road Servicing Options for York Landing - Public Consultation

Province of Manitoba
Manitoba Transportation & Government Services

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D.P. Krahn, P. Eng. - Project Manager

Submitted by

Dillon Consulting Limited

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September 13, 2001

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Attention: Mr. Amar Chadha, P. Eng.
Director of Transportation Systems Planning and Development

Summary Report for the Community of York Landing Public Consultation

Dear Mr. Chadha:

Attached find the summary report for the Public Consultation and associated technical work that has been carried out relative to community access for York Landing.

During the Public Consultation in York Landing, the existing winter road, air and ferry access conditions were reviewed with the community and the community leadership. Discussions also centred on the potential alternatives for improved access and on the potential options for an All-Weather Road access. The visit to the community and the discussions with the chief, other leaders, and residents provided the study team with a greater appreciation of the particular access issues that are faced by York Landing residents.

We would like to acknowledge the York Landing community leadership's support and also the direct involvement and technical input of Manitoba Transportation and Government Services.

Yours truly,

Dillon Consulting Limited

David P. Krahn, P. Eng.
Project Manager
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SYNOPSIS

The First Nation community of York Landing, with its population of 450, is served by a combination of scheduled ferry/winter road and scheduled air operation. Access to the community from P.R. 280 is assured for eight to nine months in most years. During fall freeze-up and spring break-up, the only means of access is by scheduled or charter air operations.

There is a general perception in the community that the ferry service is too slow and not always reliable. The winter road grades and condition inhibit efficient transport of goods and people, and air travel is too expensive. An All-Weather Road connection is viewed to be necessary.

An All-Weather Road to York Landing is estimated to cost from $45 to $65 Million. Transportation benefit cost coverage on a present-value basis is less than 20%. Given the existing winter and summer service provided by a combination of air, winter road, and ferry, the project will face strong competition for funding priority from numerous more remote communities and would have to be largely justified on a socioeconomic basis.

Given that York Landing does have road access, via the ferry to Split Lake, over eight to nine months each year, it is recommended that the focus be switched to improving the existing road transportation system. This could largely be achieved by construction of a new landing/wharf and 25 km of All-Weather Road from York Landing to Split Lake (on the Nelson River). This would provide substantially shorter and more frequent ferry access to the Split Lake community and P.R. 280. This approach would involve an estimated $8 M capital cost and would achieve better, more reliable access with little or no increase in annual operating and maintenance costs.

In the longer-term, the community's best interests would be served by an AWR. There are currently four potential alignment scenarios for such a road, which are presented in this paper. The relative viability of these alternatives is influenced by as yet undetermined time frames, a go versus no-go decision of Manitoba Hydro's Gull Rapid generating station, and considerable range of travel times to and from Thompson. To maximize the benefits and economic justification, there should also be a road connecting York Landing and Ilford.

It is therefore recommended that there be a route selection study undertaken to establish the most cost-effective All-Weather Road corridors and examine in more detail the probable time frames/interim winter road, ferry, and rail service strategies. This would permit more appropriate decisions on short-term stream crossing installations to extend winter road operational windows, enhanced ferry and rail services, and acceptable environmental impacts.

The route selection study would initially reduce the number of alternatives under consideration and then identify the further steps necessary to allow a decision on short-term and long-term access strategies and priorities.

1.0 INTRODUCTION

A public consultation meeting was held in the community of York Landing on April 17, 2001. The objectives of this meeting were to seek community input on future directions on transportation initiatives and to provide the Province of Manitoba Ministry of Transportation and Government Services Department with a better insight into the existing transportation system, seek possible justification for an All-Weather Road, and to examine alternative means of improving transportation service to York Landing.

In attendance at this meeting were:

- Roy Redhead - York Landing Chief
- Sam Cook - York Landing Councillor
- Rebecca Beaudry - York Landing Councillor
- Jimmy Bearely - York Landing Future Development Corporation
- Eric Saunders - York Landing Future Development Corporation
- Donald Saunders - York Landing Band Member
- Albert Saunders -York Landing Band Member
- Amelia Saunders - York Landing Band Member
- Hector Saunders - York Landing Band Member
- Sidney Beaudry -York Landing Band Member
- Juan Beaudry - York Landing Band Member
- Rod Murphy - Transportation Minister's office
- Amar Chadha - Manitoba Transportation and Government Services
- Dan Highway - Manitoba Transportation and Government Services
- Larry Buhr - Dillon Consulting Limited (Dillon)
- Kurt Simonsen - Dillon Consulting Limited (Dillon)

The objective of this report is to summarize consultative exercises conducted with the community and to examine feasible options and a future strategy for the development of an All-Weather Road to service the community.

2.0 EXISTING TRANSPORTATION SYSTEM AND SERVICE LEVELS

2.1 Community Profile

The community of York Landing is an isolated community approximately 115 kmnortheast of Thompson, Manitoba. York Landing has a population of approximately 450 people and was formed as a result of resettlement of the community from its original location in York Factory in the late 1960s. The total band membership is in the order of 650 people, but 200 of these live elsewhere, primarily Churchill and Split Lake.

Population growth for the community is estimated as follows:

Year	Population
2000	450
2010	700
2020	1250
2030	2250

The following discussion provides a general overview of the existing transportation network.

2.2 Railway

The community does not have rail access. The nearest rail line is the Hudson Bay Railway line, which is located approximately 30 km to the southeast in the community of Ilford. York Landing residents can access this rail line by means of a winter road to Ilford. Rail service reportedly accounts for a small percentage of rail and passenger movement. The winter road to Split Lake, and ultimately to Thompson, is the more favoured option according to the community representatives for the movement of freight.

2.3 Air Service

York Landing has scheduled air service. Skyward Aviation provides scheduled flights into York Landing daily.

The runway is currently in the process of being lengthened from 762 m to 1158 m, which will permit access by larger aircraft. The use of larger aircraft is not expected to significantly reduce air freight charges.

2.4 Winter Roads and Ferry Services

York Landing relies heavily on the winter road to supply the community with bulk goods. The winter road to York Landing begins at Provincial Road 280 (the Gillam-Thompson road) approaching the Split Lake community. The winter road crosses Split Lake (Nelson River) then travels around the east side of the lake to York Landing. A winter road is also constructed from York Landing to the community of Ilford where railway access can be provided by Hudson Bay Railway (and VIA). Figure 1 shows the location of the winter road. Annual costs to construct the York Landing to Split Lake Road are estimated at $63,000; cost to construct the York Landing to Ilford winter road are estimated at $56,000.

The winter road from York Landing to Split Lake operates from approximately mid-January to mid-April depending on weather conditions. The existing winter road route is reportedly difficult to negotiate by large trucks due to the steep topography at two to three locations. The use of heavy equipment is sometimes needed to assist large trucks in negotiating the hills. The community provides all maintenance requirements on the winter road.

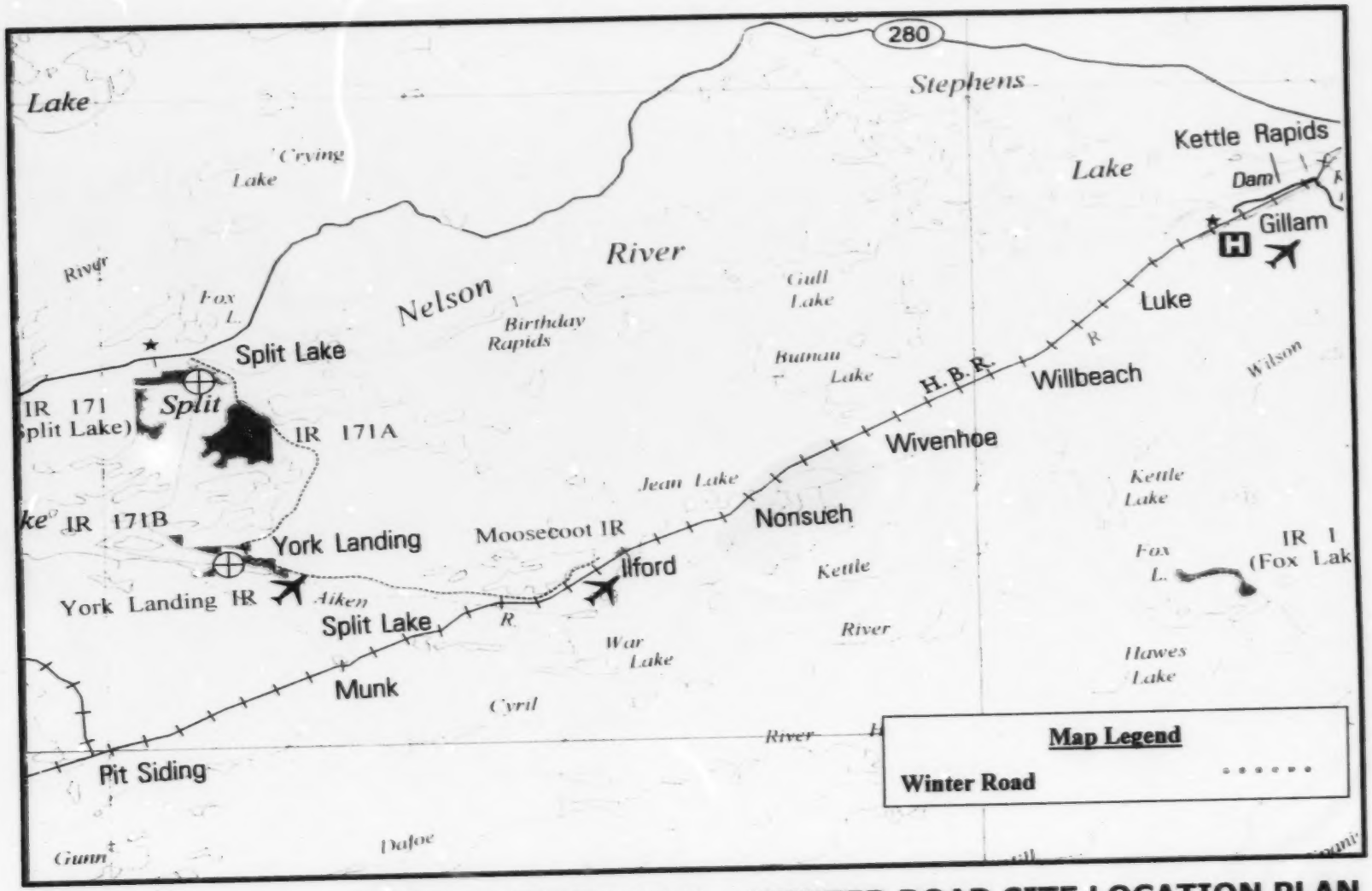
Other ice roads have also been constructed to other private camps/residences within close proximity to York Landing.

Water level fluctuations on Split Lake in the winter time have also caused intermittent problems with providing a reliable access from the ice road to the land road transition leading into the community. Winter water/ice levels reportedly fluctuate up to 0.6 m.

The York Landing to Ilford winter road has a shorter operating season due to three or four stream crossings that often can compromise ice conditions on the road. This has more of an impact to the residents of Ilford who will travel this portion of the road to York Landing and subsequently to Split Lake.

During the summer months, ferry service is provided by Manitoba Transportation and Government Services between Split Lake and York Landing. The ferry service runs five days per week with a one-way trip taking approximately two hours. The ferry can make approximately two return trips to York Landing daily.

The ferry has a capacity of approximately 15 passenger vehicles or two semi-trailers. This limited capacity was reported to be problematic, especially if large trucks are loaded onto the ferry. Depending on the number of large trucks, the capacity to handle passenger vehicles can be severely restricted. Also, if hazardous goods (such as fuel) are being hauled, passenger travel is not permitted.



YORK LANDING AREA – WINTER ROAD SITE LOCATION PLAN

FIGURE 1

In general however, the ferry service was appreciated by the community. During the summer months, the ferry is the primary means of moving freight and passengers in and out of the community.

2.5 Local Vehicles

There are only 8 km of local roads serving the community. There are approximately 30 vehicles in York Landing with possibly more in the winter when access to Thompson is feasible via the winter road.

3.0 EXISTING COMMUNITY INFRASTRUCTURE AND SERVICES

The following discussion provides a brief overview of the existing community infrastructure

Hydro/Telephone Services

York Landing is serviced by the local hydro and telephone grid.

Water Supply

York Landing is largely serviced by a piped water distribution system. Water is treated by means of a local water treatment plant. Unfortunately, raw water quality in the early spring months is difficult to treat, reportedly due to high sediment loads. This necessitates hauling potable water to the community for this period on the winter roads or by aircraft. Approximately $60,000 was spent in the 2000/2001 winter season to haul potable water to York Landing. The potable water brought to the community consists of 4 L containers, which are stored at community facilities such as the school, arena, and band office. Community members can then pick up the containers of water as required.

The raw water quality problem is currently being studied in an attempt to find a practical solution to the problem.

Sewer

York landing is serviced with a sewage collection and mechanical sewage treatment system.

Medical

The community is serviced by a nursing station with two full-time nurses. Emergency medical services consist of medical evacuation flights to Thompson or Winnipeg or winter road transport to Thompson.

Schools

York Landing has a relatively new school servicing students from Kindergarten to Grade 12. The school currently accommodates approximately 140 students.

Police

Police service is provided by the Royal Canadian Mounted Police out of Thompson.

Employment Opportunities

Employment opportunities are limited in York Landing. No forestry opportunities are available since the community is outside of any forest management area and commercial fishing is non-existent. Trapping is not practiced as the community's resource management area is located in the vicinity of the historic settlement of York Factory on Hudson Bay. The majority of community employment opportunities are in the services sector. The unemployment rate at York Landing sits at about 60 percent.

The community hopes that employment opportunities should improve with the provision of an All-Weather Road, given the potential for future hydro expansion at Gull Lake and possibly forest development.

4.0 EXISTING COMMUNITY TRANSPORT NEEDS

Based on the current population, it is estimated that York Landing ships in the order of 1,800 tonnes/year of fuel, building materials, equipment, food stuffs, etc. Based on available data and community comments, it is further estimated that the relative means of freight delivery to the community is distributed as follows:

- Rail - 170 tonnes/year
- Air - 130 tonnes/year
- Winter Road - 300 tonnes/year (average 56 useable days of travel)
- Ferry - 1200 tonnes/year

Total **1800 tonnes/year**

Passenger movement for the Year 2000 is estimated as follows:

- Rail - negligible
- Air - 4000 enplaned and deplaned
- Winter Road - 750 vehicle trips/year (average 55 useable days of traffic)
- Ferry - 2000 person trips/year

Population growth for the community is estimated at 5% to 6%/year, therefore, without a future All-Weather Road, and assuming freight and passenger movement trends are proportional to existing requirements, a five-fold increase in freight and passenger movements can be expected over the next 30 years.

5.0 COMMUNITY TRANSPORTATION COSTS - EXISTING VERSUS ALL-WEATHER ROAD SYSTEM

Approximate freight rates and passenger rates to and from York Landing area as follows:

- Air Freight (from Thompson) $0.65/kg
- Winter Road Freight (from Winnipeg) .... (small loads) $0.60 to $1.50/kg (large loads) $0.26/kg
- Ferry freight ..... no charge for normal operations/special trips have an $800 flat rate charge
- Passenger travel (air to Thompson and return) $160.00
- Passenger travel (air to Winnipeg and return) $1,060

Manitoba Transportation & Government Services estimate of annual potential costs savings with the provision of an All-Weather Road to the community are as follows:

- Freight Transport Cost Reductions - approximately $105,000/year
- Passenger Transport Cost Reductions - approximately $190,000/year
- Medivac costs to Thompson approximately $200,000/year.

These savings do not include costs for the following items

- Accommodation costs for the typical one or two night stay overs in Thompson.
- Frequent non-availability of passenger capacity on the ferry.
- Ambulance costs from Thompson Airport to Thompson Hospital.

While the actual cost of freight and passenger transport is highly dependent on a variety of factors, such as vehicle load/ultimate origin or destination/etc., it is not unreasonable to suggest the following overall transport costs based on efficient use of equipment:

	Existing Winter Road System	**All-Weather Road System**
Road Travel (to and from Thompson)	500 trips @ $26.00 = $13,000	4,000 trips @ $25.00 = $100,000
Road Freight (from Winnipeg)	300 tonnes @ $700.00 = $210,000	1600 tonnes @ $500.00 = $800,000
Air Freight (from Thompson)	130 tonnes @ $650.00 = $85,000	30 tonnes @ $650.00 = $20,000
Air Passengers (to/from Thompson)	2,400 trips @ $160.00 = $384,000	1,000 trips @ $160.00 = $160,000
Ferry (freight)	1,200 tonnes @ $525.00 = $630,000	nil
Ferry (passengers)	2,000 trips @ $26.50 = $53,000	nil
Medivac (to Thompson)	estimated @ $300,000	estimated @ $100,000
Total System Costs	**$1,675,000**	**$1,180,000**
Total System Savings due to All-Weather Road		**$495,000**

6.0 ALL-WEATHER ROAD SYSTEM - ROUTE ALTERNATIVES

Numerous All-Weather Road servicing options have been investigated. These are briefly described below:

An All-Weather Road Via Birthday Rapids:

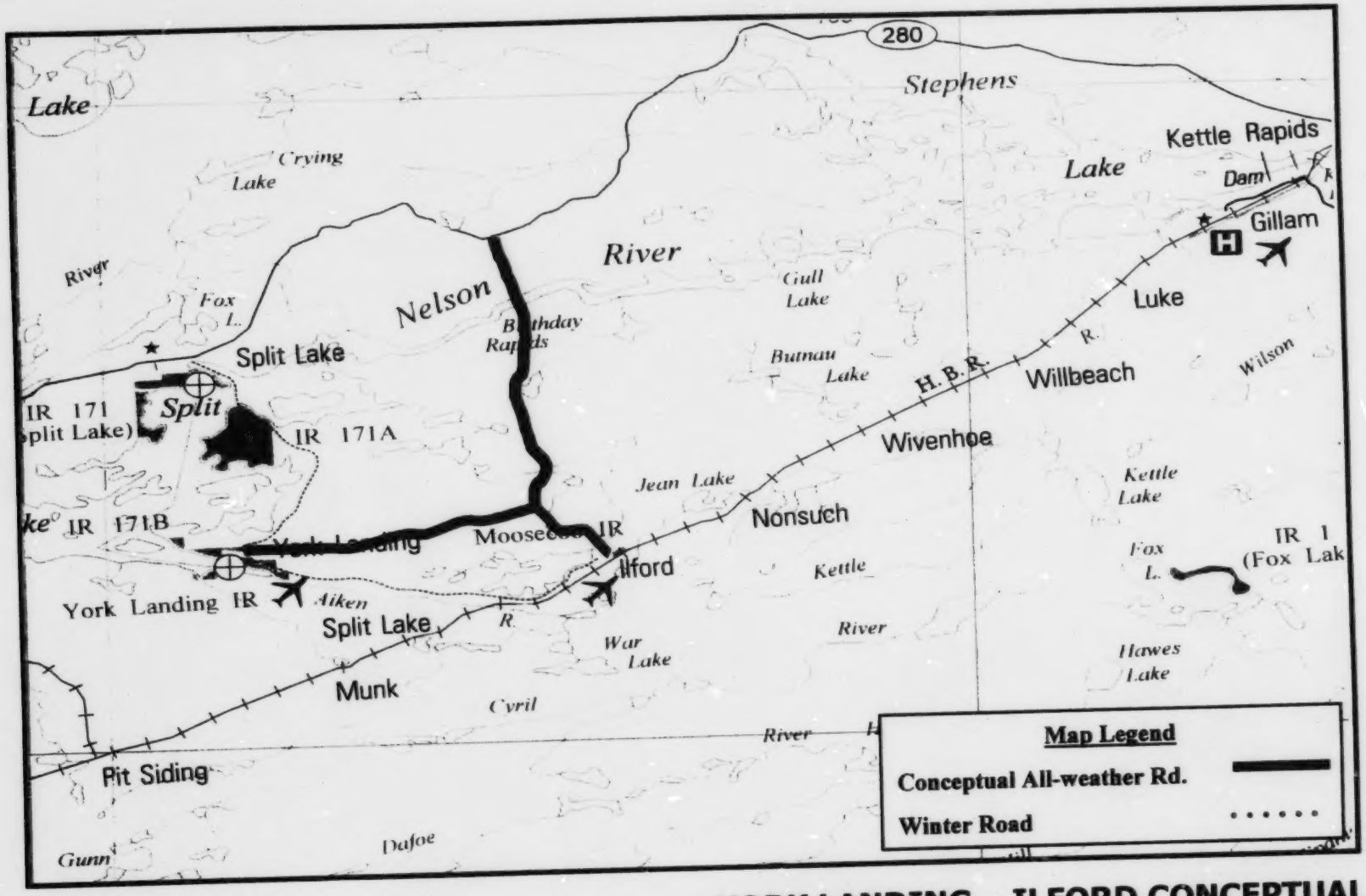
- The conceptual plan for this proposed option is shown on Figure 2.
- This option has a capital cost of approximately $45 million and includes a major bridge crossing over the Nelson River.
- Since most of the passenger and freight traffic is to Thompson, this option incurs a detour of approximately 95 km to the Split Lake intersection on Provincial Road 280. This option however provides access to Ilford and eliminates the need for any ferry crossing.

An All-Weather Road Via the Proposed Gull Lake Hydro-Electric Dam

- The conceptual plan for this road is shown on Figure 3.
- This option has a capital cost of $47 million not including the tie into the proposed Manitoba Hydro All-Weather Road from P.R. 280 to the proposed Gull Lake Generating Station.
- Like the previous option, this option incurs a significant detour of approximately 180 km to the Split Lake intersection on Provincial Road 280. This option, however, does provide All-Weather Road access to Ilford and Gillam. The Nelson River crossing would be facilitated by means of crossing on Manitoba Hydro's proposed Gull Rapids hydro-electric generating station.

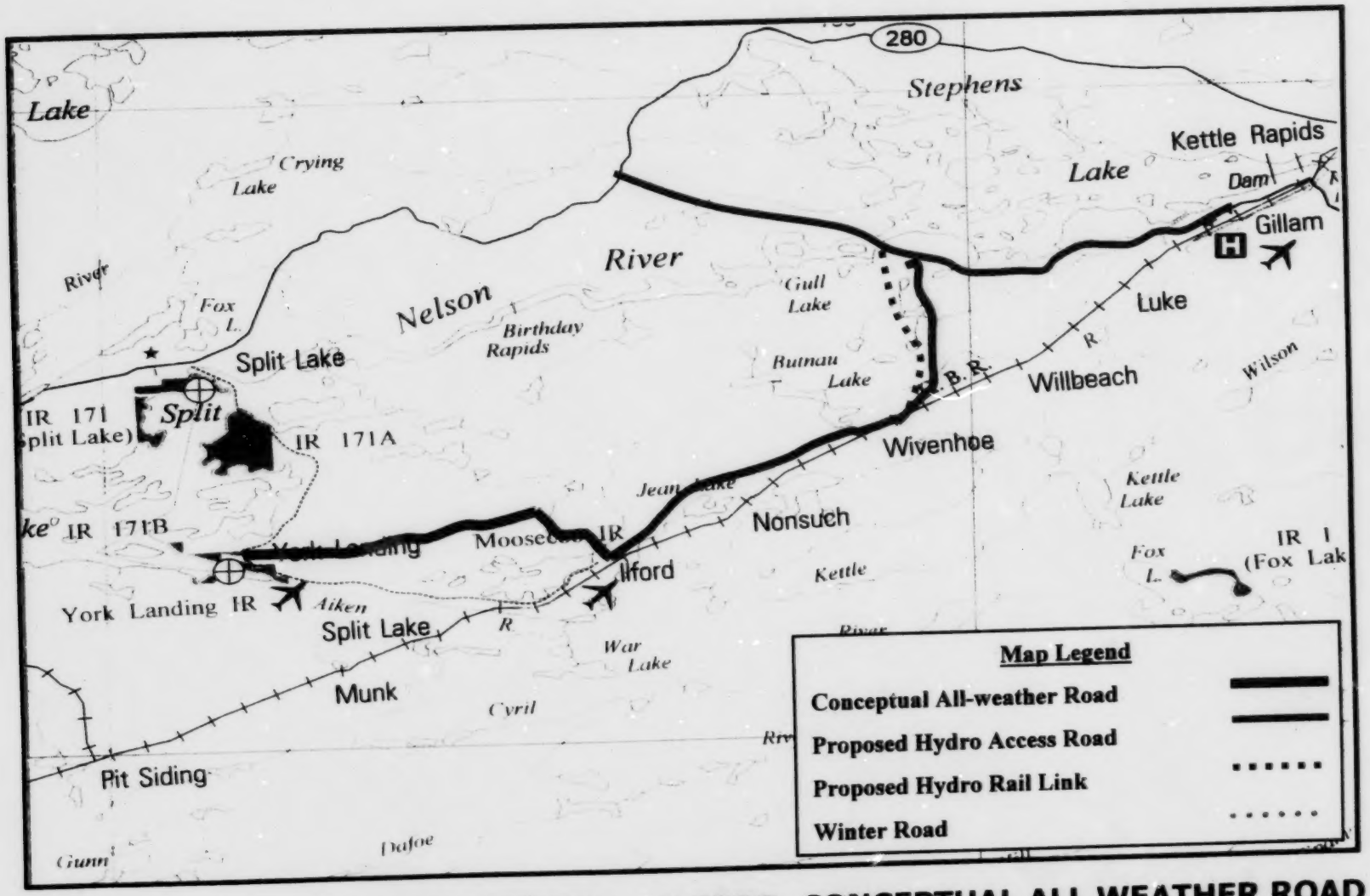
An All-Weather Road Via Kelsey

- The conceptual plan for this option is shown on Figure 4.
- This option is the one preferred by the York Landing community as it provides the most direct access to Thompson via Provincial Road 280. This road is approximately 75 km long (to its intersection with Provincial Road 280) and would cost approximately $65 million. A large portion of this cost is for permanent bridge crossings at the Grass, Burntwood, and Odei Rivers.



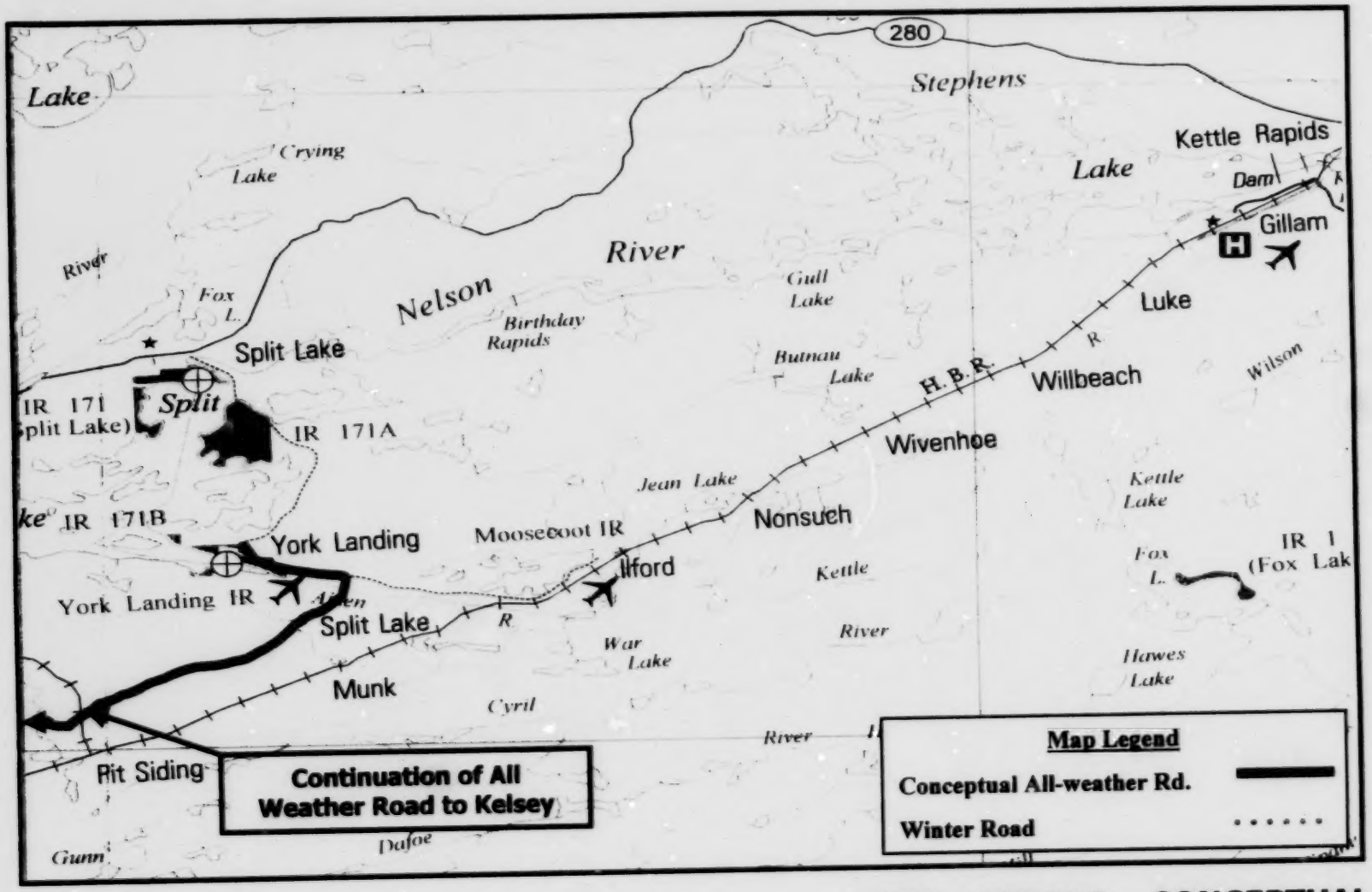
YORK LANDING – ILFORD CONCEPTUAL ALL WEATHER ROAD VIA BIRTHDAY FALLS - OPTION 1

FIGURE 2



YORK LANDING – ILFORD, CONCEPTUAL ALL WEATHER ROAD VIA THE PROPOSED GULL LAKE HYDRO ELECTRIC DAM - OPTION 2

FIGURE 3



YORK LANDING – CONCEPTUAL
ALL WEATHER ROAD VIA KELSEY - OPTION 3

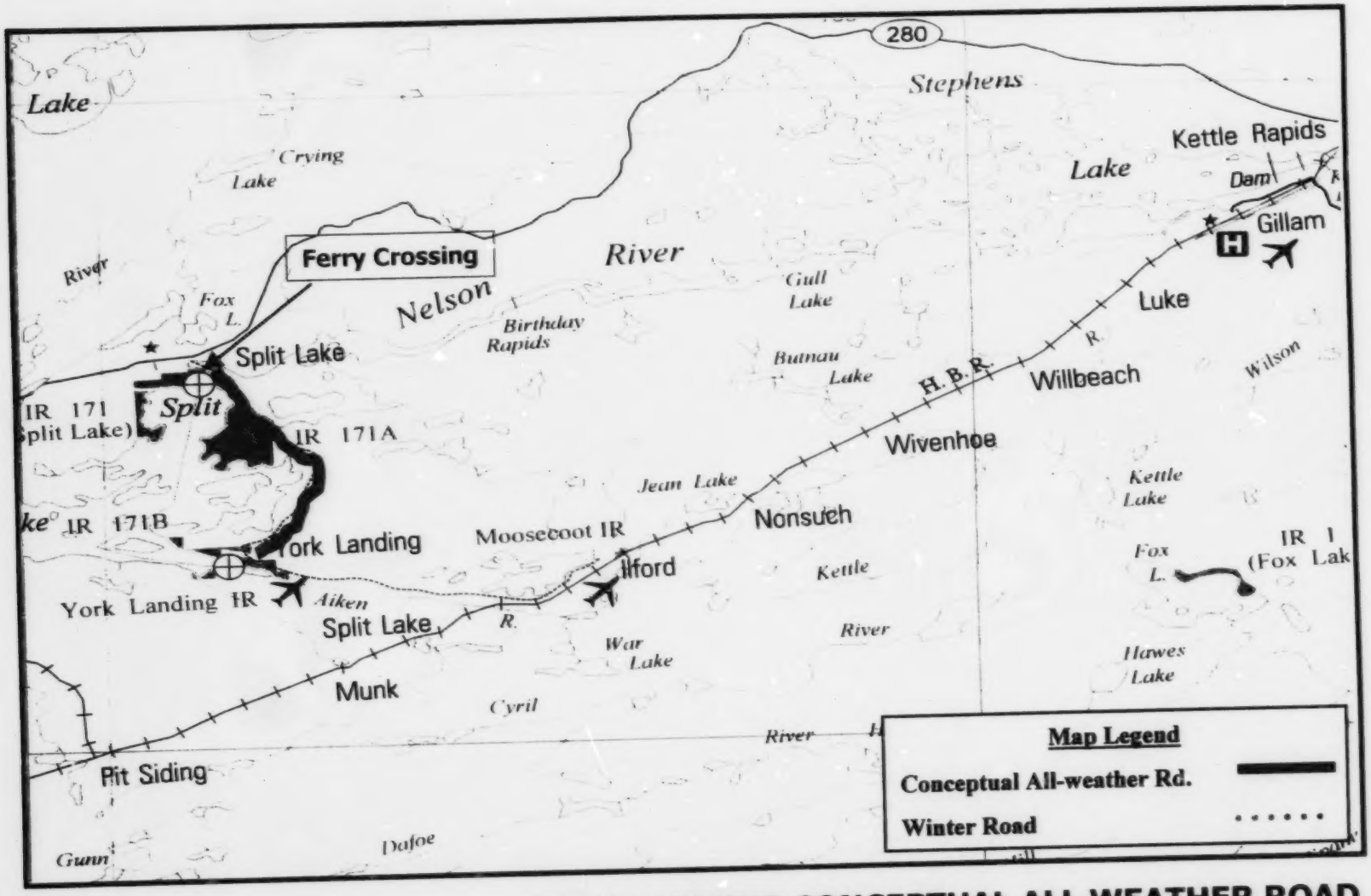
FIGURE 4

An All-Weather Road Around Split Lake with a Short Ferry Crossing/Winter Road

- The conceptual plan for this option is shown on Figure 5.
- This option consists of approximately 20 km of All-Weather Road and a short ferry crossing at Split Lake. During winter months the ferry crossing would be replaced by an ice road.
- The estimated cost of the All-Weather Road for this option is $8.0 million. This does not include annual costs of $200,000 associated with ferry operation and ice road construction.
- The capital costs of this option at **$8.0 million is more** attractive than the previous options. This option, however, does not provide year-round access during the spring thaw and winter freeze-up times. The community remains dependent on ferry service and the provision of an ice road. The advantage, however, is the ferry crossing/ice road is very short (approximately 1.25 km). Minimal vehicle delays are expected if the ferry can operate seven days a week. Given the short ferry distance, numerous ferry crossings can be made through the course of the day. During winter conditions, the ice road would provide virtually uninterrupted access.

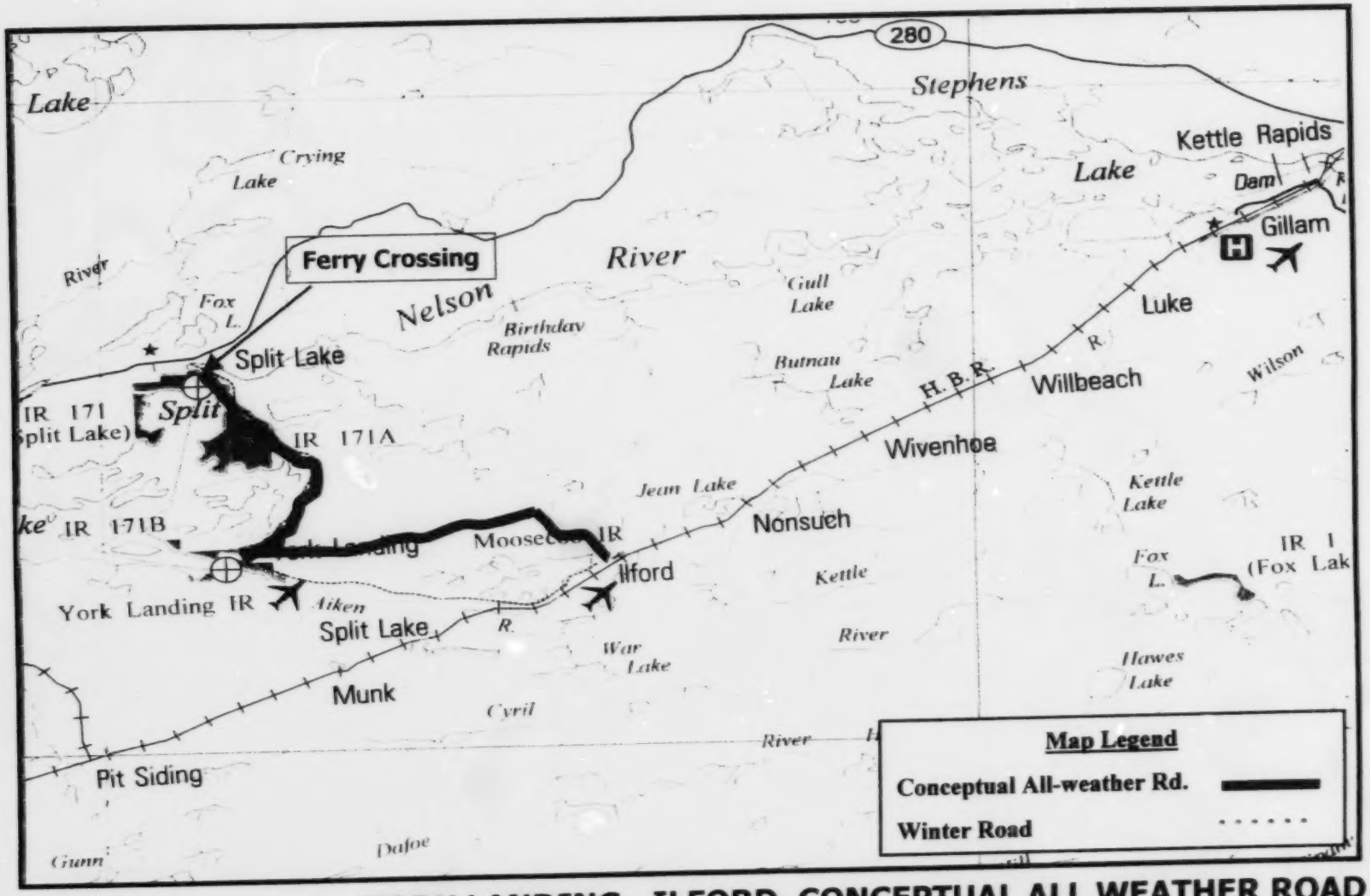
Extension of an All-Weather Road Around Split Lake and to Ilford

- The conceptual plan for this alternative is shown on Figure 6.
- This option is the same as the previous option, except an All-Weather Road is now provided to Ilford.
- The capital cost of the York Landing to Ilford Road is $15 Million.
- This option provides the additional benefit of an improved land route to Thompson via the Hudson Bay Railroad.



YORK LANDING CONCEPTUAL ALL WEATHER ROAD AROUND SPLIT LAKE AND FERRY CROSSING - OPTION 4

FIGURE 5



YORK LANDING –ILFORD, CONCEPTUAL ALL WEATHER ROAD AROUND SPLIT LAKE AND FERRY CROSSING - OPTION 5

FIGURE 6

7.0 OPPORTUNITIES AND SOCIAL IMPACTS

With the provision of an All-Weather Road, the community sees new opportunities such as:

- Improved health services.
- Improved policing.
- Greater recreational opportunities.
- Employment with Manitoba Hydro.
- Employment in broader resource industry.
- Cottage development.
- Easier access to medical/dental services.
- Access to banking and other professional services.
- Possible Forestry development.
- Tourism and related industry.
- Year around travel/lower cost personal travel.

Social impacts to the community were perceived as positive and negative. An expanded social life could be good or bad. Easier access to and from Thompson would promote a better lifestyle, but it could also promote crime/drug use/etc. It would also may bring outsider cottage development and resource exploitation.

8.0 STRATEGIC ANALYSIS AND SERVICING STRATEGY

On a strictly transportation cost-benefit basis, an All-Weather Road from York Landing to P.R. 280 cannot be justified. Benefits have a 20-year value of $6.5 M compared to 20-year present value costs of $40 Million (less than 20% cost coverage). Such a project would require very substantial non-financial social benefits in order to make it a priority item.

Even if the Ilford community is tied into this All-Weather system, the benefit-cost coverage would only rise to 35%. As such, the project would still require substantial additional justification on a socioeconomic basis in order to become a funding priority.

A lower cost alternative combining a shorter ferry run/winter road service with an All-Weather Road from the Nelson River to York Landing would be more affordable with a capital cost of $8 M. On a 20-year present value basis, the benefit would cover 75% of the costs. As such, its funding priority would seem much higher.

In the longer-term, the community's best interests would be served by an AWR. As discussed, there are currently four potential alignment scenarios for such a road. The relative viability of these alternatives is influenced by as yet undetermined time frames, a go versus no-go decision of Manitoba Hydro's Gull Rapid generating station, and considerable range of travel times to and from Thompson. To maximize the benefits and economic justification, there should also be a road connecting York Landing and Ilford.

It is therefore recommended that there be a route selection study undertaken to establish the most cost-effective All-Weather Road corridors and examine in more detail winter road, ferry, rail service strategies, and associated study time frames. This would permit more appropriate decisions on short-term stream crossing installations to extend winter road operational windows, enhanced ferry and rail services, and acceptable environmental impacts.

The route selection study would initially reduce the number of alternatives under consideration and then identify the further steps necessary to allow a decision on short-term and long-term access strategies and priorities.